DKL-9999

D-M-E
INSTALLATION DATA For: 'DKL' INTERNAL LATCH LOCK ASSEMBLIES

Please read carefully before installing assemblies & components

THE D-M-E INTERNAL LATCH LOCK ALLOWS CONTROL OF THE MOLD PLATE OPENING SEQUENCE ON MOLD BASES WITH STRIPPER PLATES. IT ALLOWS ONE PLATE OR GROUP OF PLATES TO BE LATCHED TOGETHER WHILE THE FIRST PARTING LINE OPENING OCCURS - THEN AFTER A PREDETERMINED AMOUNT OF TRAVEL THE LATCH LOCK RELEASES THE LATCHED PLATE OR GROUP OF PLATES FOR THE REMAINING PARTING LINE OR PARTING LINES TO OPEN.

U. S. PATENT NO. 5, 494, 435

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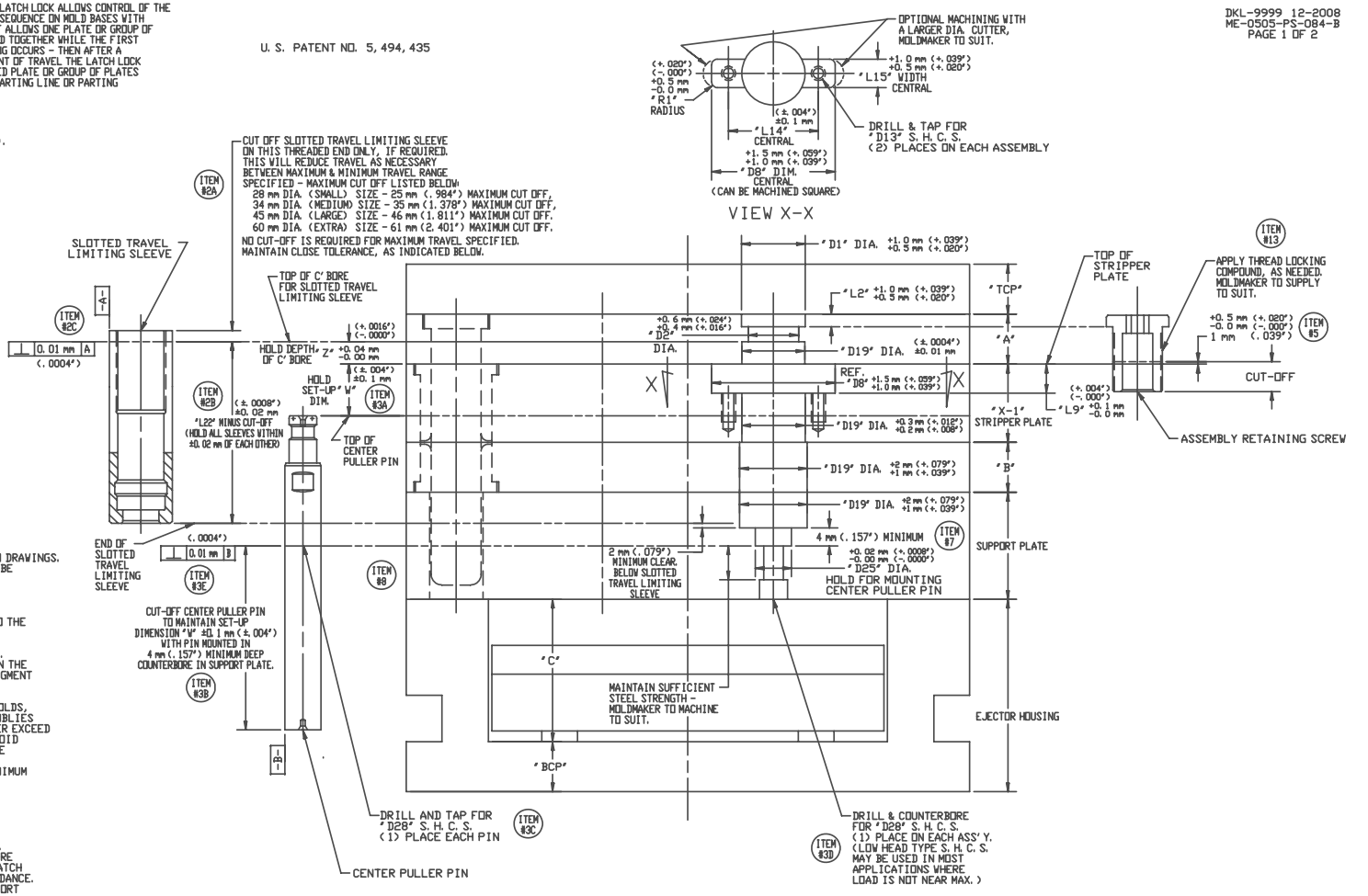
BASIC APPLICATION DESIGN GUIDELINES AND INSTALLATION DATA:

1. SELECT THE APPROPRIATE 'DKL' INTERNAL LATCH LOCK SIZE - 28 mm DIA. (SMALL), 34 mm DIA. (MEDIUM), 45 mm DIA. (LARGE) OR 60 mm DIA. (EXTRA). BASED ON THE WIDTH OF THE MOLD BASE. REFER TO THE SELECTION CHART ON PAGE 107 OF THE DME MOLD COMPONENTS CATALOG. HOWEVER, LARGE MOLDS, THICK PLATES, OR HEAVY LOAD APPLICATIONS MAY REQUIRE THE NEXT LARGEST SIZE ASSEMBLY THAN IS SPECIFIED.
2. SELECT THE APPROPRIATE TRAVEL RANGE FROM THE TWO CHOICES FOR EACH SIZE IN THE CHART ON PAGE 107 OF THE DME MOLD COMPONENTS CATALOG. THIS SELECTION IS BASED ON THE SPECIFIC APPLICATION REQUIREMENTS FOR THE AMOUNT OF TRAVEL THAT MUST OCCUR AT ONE PARTING LINE PRIOR TO THE LATCH BEING RELEASED. THE TOTAL TRAVEL REQUIREMENTS ARE BASED ON THE AMOUNT NEEDED FOR THE APPLICATION AS EXPLAINED ABOVE, PLUS 3 mm (.12") MINIMUM ADDITIONAL ALLOWANCE. THIS ADDED 3 mm (.12") MINIMUM WILL MAKE SURE THE FULL REQUIRED TRAVEL HAS OCCURRED BEFORE THE LATCH LOCK STARTS ITS RELEASING ACTION.
   A. THE SLOTTED TRAVEL LIMITING SLEEVE CAN BE CUT-OFF TO REDUCE THE TRAVEL BETWEEN THE MAXIMUM AND MINIMUM FOR EACH SIZE. REFER TO INFORMATION IN DRAWINGS TO RIGHT AND ON OTHER SIDE.
   B. THE OVER-ALL LENGTH OF ALL THE SLOTTED TRAVEL LIMITING SLEEVES IN EACH MOLD BASE MUST BE THE SAME AND BE CLOSELY HELD TO A TOLERANCE OF ±0.02 mm (±.0008").
   C. THE CUT-OFF END OF THE SLOTTED TRAVEL LIMITING SLEEVE MUST BE GROUND PERPENDICULAR TO THE OUTSIDE DIAMETER WITHIN 0.01 mm (.0004") AND ALL BURRS MUST BE REMOVED.
3. SELECT THE APPROPRIATE LENGTH FOR THE CENTER PULLER PIN FROM THE TWO CHOICES FOR EACH SIZE IN THE CHART ON PAGE 107 OF THE DME MOLD COMPONENTS CATALOG. THE LENGTH OF THE PIN IS DETERMINED BY THE SPECIFIC APPLICATION INCLUDING THE MOLD BASE PLATE THICKNESSES, WHERE THE PIN IS MOUNTED, ETC. IF POSSIBLE, THE CENTER PULLER PIN SHOULD BE MOUNTED IN THE SUPPORT PLATE. HOWEVER, SOME APPLICATIONS REQUIRE THE CENTER PULLER PIN TO BE MOUNTED IN THE BOTTOM CLAMPING PLATE. THIS WILL DEPEND ON THE TRAVEL OR THE LENGTH OF THE SLOTTED TRAVEL LIMITING SLEEVE COMPONENT WHICH CONTROLS THE TRAVEL AND THE PLATE THICKNESSES IN THE MOLD BASE.
   A. IT IS VERY IMPORTANT TO HOLD THE SET-UP DIMENSION 'W' AND TOLERANCE OF ±0.1 mm (±.004") TO THE SMALLER DIAMETER END ON THE CENTER PULLER PIN.
   B. THE LOCATION OF THE MOUNTING COUNTERBORE IN THE SUPPORT OR BOTTOM CLAMPING PLATE MUST BE ESTABLISHED TO MAINTAIN THE ABOVE SET-UP DIMENSION 'W' ±0.1 mm (±.004").
   C. AFTER THE CENTER PULLER PIN HAS BEEN CUT-OFF TO THE PROPER LENGTH AND TOLERANCE, THE LARGE DIA. END MUST BE DRILLED AND TAPPED AS INDICATED BY DIMENSION 'D28' ON PAGE 110 OF THE DME MOLD COMPONENTS CATALOG. REFER TO DRAWINGS.
   D. IN SOME CASES (EXCEPT WHERE LOAD IS NEAR MAXIMUM) LOW HEAD S. H. C. S. CAN BE USED IN THE SUPPORT OR BOTTOM CLAMP PLATE TO RETAIN CENTER PULLER PINS. THIS WILL PROVIDE ADDITIONAL ROOM FOR THE 4 mm (.157") MINIMUM DEEP COUNTERBORE FOR ALIGNING THE CENTER PULLER PIN WITH THE OTHER COMPONENTS IN THE ASSEMBLY.
   E. THE CUT-OFF END OF THE CENTER PULLER PIN MUST BE GROUND PERPENDICULAR TO THE OUTSIDE DIAMETER WITHIN 0.01 mm (.0004") AND ALL BURRS MUST BE REMOVED.
4. THE ANSWERS TO THE ABOVE ITEMS (1-3) SHOULD ESTABLISH A SPECIFIC CATALOG NUMBER ASSEMBLY FROM THE CHART ON PAGE 107 OF THE DME MOLD COMPONENTS CATALOG.
5. CUT-OFF THE ASSEMBLY RETAINING SCREW ON THE THREADED END ONLY AS INDICATED IN THE DRAWINGS ON BOTH SIDES TO THE FAR RIGHT. THIS WILL PROVIDE AS MUCH THREAD ENGAGMENT INTO THE SLOTTED TRAVEL LIMITING SLEEVE WITHOUT THE ASSEMBLY RETAINING SCREW INTERFERING WITH THE BODY.
6. A MINIMUM OF FOUR ASSEMBLIES ARE RECOMMENDED PER MOLD. HOWEVER, FOR LARGER MOLDS, THICK PLATES OR AN APPLICATION WHERE LOADS ARE NEAR MAXIMUM, ADDITIONAL ASSEMBLIES AND/OR NEXT LARGEST SIZE ASSEMBLIES MAY BE REQUIRED. AN APPLICATION MUST NEVER EXCEED THE MAXIMUM RECOMMENDED LOAD VALUES. A BALANCED LOAD MUST BE MAINTAINED TO AVOID COCKING AND BINDING WHICH COULD CAUSE SEVERE OVERLOADING. ONLY ONE SIZE OF THE INTERNAL LATCH LOCK ASSEMBLY SHOULD BE USED IN EACH MOLD BASE.
7. THE CENTER PULLER PIN SHOULD BE COUNTERBORED INTO ITS MOUNTING PLATE 4 mm MINIMUM (.157" MINIMUM) FOR MOST APPLICATIONS, AS SHOWN IN THE DRAWINGS ON BOTH SIDES OF THIS SHEET. THIS COUNTERBORE ALIGNS THE CENTER PULLER PIN WITH THE OTHER COMPONENTS IN THE ASSEMBLY.
8. THE MOST COMMON APPLICATIONS FOR THE 'DKL' INTERNAL LATCH LOCKS ARE IN THE D-M-E AX-SERIES STRIPPER PLATE MOLD BASES. ALTHOUGH THE AX-SERIES MOLD BASE APPLICATION IS SHOWN IN THE INSTALLATION DATA, MANY OTHER TYPES OF STRIPPER PLATE MOLD BASES CAN ALSO BE USED WITH THIS INTERNAL PLATE LATCHING MECHANISM. IT IS IMPORTANT TO MAKE SURE THAT THE LEADER PIN LENGTHS IN ALL APPLICATIONS ARE LONG ENOUGH TO FULLY ENGAGE THE STRIPPER PLATE THROUGH ITS FULL TRAVEL. THE LATCH LOCK MECHANISM LATCHES TWO PLATES TOGETHER BUT IS NOT INTENDED TO PROVIDE GUIDANCE. INSTEAD IT RELIES ON THE LEADER PINS IN THE MOLD FOR PROPER ALIGNMENT AND SUPPORT OF THE ACTUATED STRIPPER PLATES.
9. IN THE FULLY LATCHED POSITION THE INTERNAL LATCH LOCK MECHANISM WILL ALLOW MOVEMENT OF APPROXIMATELY 0.4 mm (.016") FOR THE 28 mm DIA. AND 34 mm DIA. ASSEMBLIES AND APPROXIMATELY 0.5 mm (.020") FOR THE 45 mm DIA. AND 60 mm DIA ASSEMBLIES.
10. INJECTION MOLDING MACHINE MOLD OPENING SPEED MAY HAVE TO BE REDUCED IN ORDER TO MAKE SURE THAT EXCESSIVE SHOCK LOADING DOES NOT OCCUR.
11. THE INTERNAL LATCH LOCK IS NOT RECOMMENDED FOR SEVERE LOAD APPLICATIONS.
12. THE 'DKL' INTERNAL LATCH LOCK MUST NOT BE EXPOSED TO TEMPERATURES THAT EXCEED 150°C (300°F) AT ANY TIME.
13. APPLY A THREAD LOCKING COMPOUND TO EACH OF THE THREADED AREAS TO PREVENT LOOSENING, AS REQUIRED. MOLDMAKER TO SUPPLY TO SUIT.
14. SPRINGS MUST NOT BE USED ON THE PARTING LINES BEING LATCHED SINCE THEY COULD CAUSE EXCESSIVE WEAR ON THE PIN & CAMS AND POSSIBLE COCKING AND BINDING OF THE PLATES.
15. METRIC UNITS OF MEASURE ARE SPECIFIED IN MOST CASES, I.E. "mm" FOR MILLIMETERS, EXCEPT FOR SOME REFERENCE DIMENSIONS AND TOLERANCES WHICH ARE ALSO SPECIFIED IN INCHES AND MARKED (") IN PARENTHESES.
16. FOR ALL DIMENSIONAL SPECIFICATIONS AND OTHER INFORMATION REFER TO THE 'DKL' INTERNAL LATCH LOCK BROCHURE, PAGES 107 THOUGH 116 OF THE DME MOLD COMPONENTS CATALOG, AS WELL AS BOTH SIDES OF THIS SHEET.
17. IF THE OPTIONAL GUIDED EJECTION AND RETURN SLEEVES ARE BEING USED, REFER TO INSTALLATION DATA SHEET NUMBER 'DKL-9998' FOR ADDITIONAL INFORMATION.
18. LUBRICATE ALL METAL TO METAL CONTACT AREAS INITIALLY AND PERIODICALLY AS REQUIRED. A GOOD GRADE OF MOLDMAKERS NON-MELTING TYPE GREASE FOR THE APPROPRIATE TEMPERATURE SHOULD BE USED.



MOLD BASE MACHINING DIMENSIONS ARE SHOWN FOR 'DKL' PLATE LATCHING ASSEMBLIES WITH THE CENTER PULLER PIN MOUNTED IN THE SUPPORT PLATE. A D-M-E AX-SERIES STRIPPER PLATE MOLD BASE IS SHOWN IN THIS TYPICAL APPLICATION.

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NOTES:
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⚠WARNING

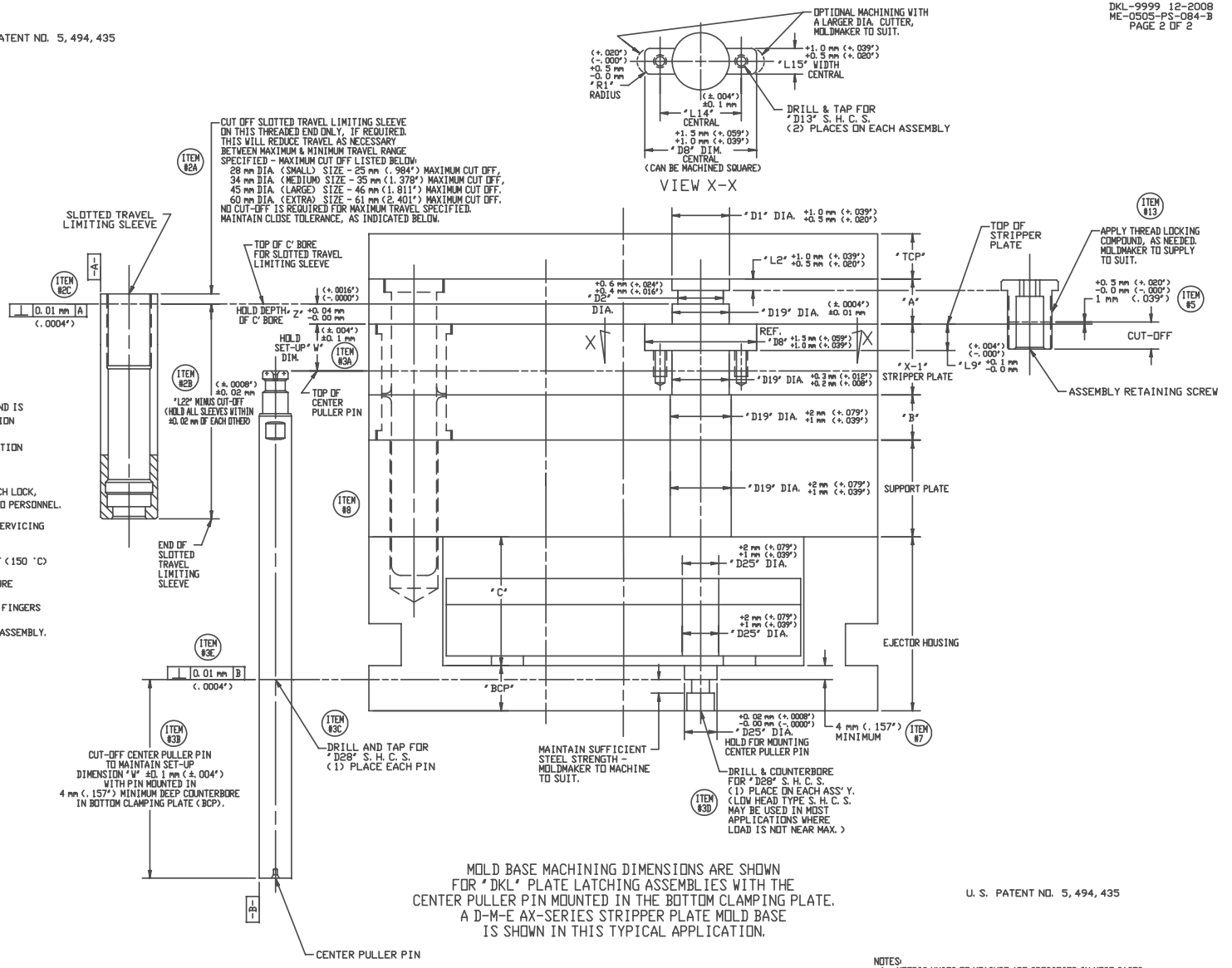
FAILURE TO COMPLY COULD RESULT IN SERIOUS INJURY

THE DKL INTERNAL LATCH LOCK IS INTENDED TO BE USED FOR STRIPPER PLATE CONTROL, AND IS INTENDED TO BE ACTUATED BY THE OPENING AND CLOSING MOTION OF THE MOLD AND INJECTION MOLDING MACHINE PLATENS.
MACHINE GUARD DOORS MUST BE PRESENT AND INTERLOCKED WITH THE MOTION OF THE INJECTION MACHINE PLATENS.
FAILURE TO COMPLY COULD CAUSE SERIOUS INJURY TO PERSONNEL.

CARE MUST BE TAKEN WHEN INSTALLING, ADJUSTING OR SERVICING THE DKL INTERNAL LATCH LOCK, AS IMPROPER HANDLING OR USE MAY RESULT IN EQUIPMENT DAMAGE AND POSSIBLE INJURY TO PERSONNEL.

TO AVOID DAMAGE, MISUSE OR PERSONAL INJURY DURING INSTALLATION, ADJUSTMENT OR SERVICING OF THE DKL INTERNAL LATCH LOCK:

1. DO NOT EXPOSE THE DKL INTERNAL LATCH LOCK TO TEMPERATURES IN EXCESS OF 300 °F (150 °C) AT ANY TIME.
2. ALLOW DKL INTERNAL LATCH LOCK PRODUCT SURFACES TO COOL DOWN TO ROOM TEMPERATURE BEFORE ADDING LUBRICANT.
3. WHEN SERVICING THE DKL INTERNAL LATCH LOCK ASSEMBLY AND/OR REPLACING THE CAM FINGERS WEAR PROTECTIVE GLOVES, PROTECTIVE GOGGLES OR A PROTECTIVE FACE SHIELD.
4. DO NOT EXCEED SPECIFIED LOAD LIMITS FOR THE INTENDED DKL INTERNAL LATCH LOCK ASSEMBLY.



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